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THE CHANGE in the DISTRIBUTION of the NATIONAL INCOME 1880–1913

BY

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A LECTURE

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THE CHANGE IN THE DISTRIBUTION OF THE NATIONAL INCOME, 1880–1913

THE disturbances arising from the war have caused a redistribution of real income, and have brought to the front in their acutest form the old questions, how command over the purchase of material goods is obtained by individuals, why it is so obtained, whether the continual distribution of wealth on the pre-war basis is inevitable, or a new equilibrium can be established? There is no doubt that this distribution has been considerably modified since 1914, and I have several times been asked to estimate the nature and magnitude of the modifications; but it is equally certain that we have not yet arrived at equilibrium either in prices, incomes, or wages, and that a statement which might be true for January 1920 would not be applicable to a date six months before or after. I feel compelled to leave this tempting question to those who are content to make hazardous estimates, or who have better access to and more confidence in the sporadic information on which such estimates must rest. I prefer to turn to an aspect of the subject which can be surveyed with less uncertainty, from which we can at least command the whole field of phenomena, namely, the consideration of the changes which took place in the period before the war, which led to the distribution of income which I described early last year.[1] Such a study is indeed essential if we are to have the power of determining the possibility of permanent modifications. The genesis and distribution of income has not hitherto been arbitrary or subject to the whim of any government or class, but has been the result of forces, which have been to a great extent beyond control, acting

[1] *The Division of the Product of Industry.* Clarendon Press, 1919.

in an environment which has been determined only to a moderate extent by law or policy. The understanding of these forces and of their response to modifications of the environment is the proper field of political economy, and a study of them should be undertaken much more seriously than is now the fashion by would-be reformers before radical changes are advocated or beneficent results promised. Towards this study I offer only a small, but relevant, contribution, namely a description of the results which were produced in a generation (a third of a century), from which others may be able to infer the action and nature of the forces at work and determine what changes are at the same time possible and desirable.

The period about 1880 is chosen as the starting-point because at that date the inflation of prices of the early '70's was passed, and not only had relative equilibrium been reached, but also the price-level differed very little from that of 1913.[1] The errors due to a faulty estimate of price movements are, therefore, at a minimum in the comparisons. The special year 1880 is taken because the records of unemployment and of exports show that in that year the acute depression of 1878–9 was over. To go back farther, say to 1860, would need the use of less complete records both of wages and prices.

CLASSIFICATION OF INCOME

'National Income' is the rather inappropriate but convenient phrase used to express the aggregate of the incomes of the residents in the territory of a nation, in this

[1] Sauerbeck's index numbers of wholesale prices.

1870	96	1880	88	1890	72	1900	75	1910	78
1871	100	1881	85	1891	72	1901	70	1911	80
1872	109	1882	84	1892	68	1902	69	1912	85
1873	111	1883	82	1893	68	1903	69	1913	85
1874	102	1884	76	1894	63	1904	70	1914	
1875	96	1885	72	1895	62	1905	72	(1st 7	
1876	95	1886	69	1896	61	1906	77	months)	83
1877	94	1887	68	1897	62	1907	80		
1878	87	1888	70	1898	64	1908	73		
1879	83	1889	72	1899	68	1909	74		

case in the United Kingdom. Incomes are taken as gross, before income or supertax or rates are deducted, a method which will no longer be valid in the present era of high taxation. The ' distribution ' may be considered from three points of view : (1) by economic categories, the aggregate income that accrues to ownership of land, to ownership of capital, to enterprise and management, to labour ; (2) the rate of remuneration per acre of land, per £100 capital, per week's effort ; (3) the income of individuals, whether it arises from ownership or effort. A falling rate per unit is of course not inconsistent with a higher aggregate ; and a larger proportion to ownership in the aggregate does not necessarily involve a greater inequality among persons. Greater equality can theoretically be obtained either by ownership in common of all land and capital, or by individual ownership of equal shares. Unfortunately available statistics do not make it possible to keep these three aspects of distribution clearly distinct. It is necessary in fact to divide income into three classes whose distinction is empirical, not logical, viz. (*a*) income subject to income tax, (*b*) wages, (*c*) intermediate income, that is the income of those who do not receive wages, but had in all less than £150 a year prior to 1894 or £160 in or after that year. This classification omits almost entirely income from property in the possession of wage-earners and income of institutions not subject to tax.

Information about (*a*) is contained in the Reports of the Commissioners of Inland Revenue, whose complexities have been disentangled and difficulties removed by Dr. Stamp.[1]

For (*b*) we have the general reports on Wages by the Board of Trade in 1886[2] and 1906,[3] the statements of standard wage-rates and wage-changes by the Labour Department, and numerous estimates of the general movement and particular estimates for special industries by private individuals. Data for the estimates of (*c*) are very infrequent and imperfect, and this is particularly unfortunate because it is not improbable that in this category are to

[1] *British Incomes and Property*, 1916.
[2] C. 6889.
[3] Cd. 4545 and later reports.

be found the largest relative changes. Mr. Baxter made a rough estimate in 1867,[1] obtaining the numbers of persons by subtracting his estimate of the number of income-tax payers from his estimate of the number of individuals with independent incomes in the upper and middle classes, and making a rough guess at their average income.

Mr. Leone Levi[2] gave estimates for 1866–7 and 1882–3, but does not show his data or show how he arrived at them. Mr. Giffen[3] was in 1886 content to add percentages to Mr. Baxter's estimate. The only new investigation made is that by a committee of the British Association in 1910.[4]

I proceed to discuss these three groups separately.

INCOME-TAX INCOME

The total 'gross income brought under review' by the Commissioners contains several elements which are not true income, such as allowances for repairs and wear and tear. When these are subtracted we obtain what may be called 'taxable income', which before actual taxation is subject to certain abatements. It is this taxable income unabated which concerns us. The definition of income and the method of reckoning allowances have changed in several respects since 1880, and we are indebted to Dr. Stamp (loc. cit., p. 319) for a comparable series, showing for each year 'taxable income' as it would have been if the methods introduced in 1894–5 had been applied throughout.

In the table a sum has been subtracted prior to 1894–5 to remove incomes between £150 and £160 from the total, so as to show throughout the amount of taxable incomes above £160, though prior to 1894 the exemption limit was £150. The income between £150 and £160 is estimated as only £16½ Mn. in 1893. The assessment for each year

[1] *National Income*, by R. Dudley Baxter, 1868.

[2] *Wages and Earnings of the Working Classes*, by Leone Levi, 1885. See pp. 6–7 and 51.

[3] 'Further notes on the Progress of the Working Classes', *Journal of the Statistical Society*, 1886, and in *Essays in Finance*.

[4] *Journal of the Royal Statistical Society*, December 1910.

contains under Schedule D averages of incomes received in previous years, so that the income in 1880 is given approximately by the assessment in 1881–2 or a combination of this with the assessment in 1882–3. For this reason a rough estimate is suggested for 1914–15 (not given by Dr. Stamp) for application to 1913.

Year of Assessment.	'Taxable Income.'
	£
Year 1881–2	469 Mn.
Average 1882–3 to 1886–7	489 „
„ 1887–8 to 1891–2	528 „
„ 1892–3 to 1896–7	562 „
„ 1897–8 to 1901–2	664 „
„ 1902–3 to 1906–7	741 „
„ 1907–8 to 1911–12	830 „
Year 1912–13	907 „
„ 1913–14	951 „
„ 1914–15	(1,000) „

In addition to the known taxable income there is no doubt some under Schedule D which escapes taxation owing to understatement of profits, and some which evades it by reinvestment abroad. Dr. Stamp (p. 324) considers that about £37 Mn. is a reasonable estimate for these two leakages in 1913 and gives good reasons for not placing it higher. In 1880 facilities for evasion were greater and subsequent recovery more difficult, and after consideration of the estimates by earlier authorities I do not think that it ought to be put at less than £60 Mn. at that date.

When this correction is made it appears that taxable income in the possession of persons with over £160 a year increased from about £530 Mn. in 1880 to £1,040 Mn. in 1913, or at about 2 per cent. per annum, while population grew at 0·9 per cent. and occupied population at 1 per cent. per annum. The rate of growth of income was not, however, uniform in the period, for in the first 18 years it averaged 1·7 per cent. per annum while from 1898 to 1913 it averaged 2·4 per cent. but if we allow for the increase in the purchasing power of money in the first period and its decrease in the second, the rate of growth is found to be considerably greater prior to 1898 or 1893.

The number of income-tax payers is not accurately known at any date, but Dr. Stamp (loc. cit., pp. 448–9) gives the following estimates of the maximum and minimum numbers which seem possible.

NUMBER OF TAXPAYERS, 000's (INCOMES ABOVE £160)

Year of Assessment.	Minimum.	Maximum.	Estimate.
1881–2	604	632	618
1894–5	727	762	744
1903–4	—	—	950*
1909–10	1,030	1,100	1,075
1912–13	—	—	1,150*
1913–14	—	—	1,190*
1914–15	—	—	1,240*

Now if the number of payers had increased since 1880 only at the same rate as the occupied population, there would have been about 860,000 payers in 1914–15, instead of 1,240,000. There is, therefore, an addition of 380,000 incomes above £160 beyond the number accountable for by the growth of population. It can be computed that this is approximately the number of incomes between £160 and £225 per annum, and that consequently if the exemption limit had been raised to £225 the same proportion of the occupied population would have paid income tax in 1913 as in 1880. Though those incomes are numerous and account for nearly one-third of the taxpayers, yet their aggregate is only about £75 Mn., or $7\frac{1}{2}$ per cent. of taxable income.

The average income of the 618,000 taxpayers above £160 in 1880 was about £855, while that of 860,000 taxpayers above £225 in 1913 was about £1,120, the increase being 30 per cent. We shall presently see that the average earnings of the manual working class in this period increased by about 34 per cent.

INTERMEDIATE INCOMES

In the detailed report of the British Association Committee of 1910 it is estimated that there were 4,053,000 persons in the United Kingdom with incomes not assessed to income

* Quoted, but not confirmed, by Dr. Stamp.

tax and not generally classed as wage-earners, and that their aggregate income was £335 Mn. and average income £84. This includes over 900,000 shop assistants and others with an aggregate income of £60 Mn. who might reasonably be classed with wage-earners both in status and in income, but in the earlier estimates they were not so classed.

We cannot now improve on the earlier estimates, which are as follows :

INTERMEDIATE INCOME

Authority.	Date.	Limit of Income.	Number of Persons. 000's.	Aggregate Income.	Average Income.
Baxter.	1867	£100	1,497	£81·3 Mn.	£54
Levi .	1866–7	150	—	120 ,,	—
Levi .	1882–3	150	—	140 ,,	—
Giffen .	1883	150	1,800 ,,	118 ,,	66
Committee	1910*	160	4,053 ,,	335 ,,	84
Committee amended	1913	160	4,310 ,,	364 ,,	84½

The amendment to 1913 is due to a revision of the numbers and the inclusion of more salaried persons in industry.

There is nothing inherently improbable in these estimates, and the authority and experience of their authors may be held perhaps to compensate the absence of detailed evidence, for there are many checks of a kind not easily expressed in numbers, which a statistician can bring to bear on estimates which in less experienced hands would be mere guesses. But the authors do not claim any high degree of precision, and we should be prepared to allow for an error of perhaps 20 per cent. in the number of persons and in their income in 1880. It may be suggested that the best account we can give for 1880 (taking the limit as £160) is :

Number of persons	1,500,000 to 2,200,000
Average income	£70
Aggregate income	£100 Mn. to £155 Mn.

while in 1913 we have 4,690,000 persons below £225 (viz. 4,310,000 below £160, and 380,000 between £160 and £225), with an aggregate income of £445 Mn.

* The committee calculated that their estimate of aggregate income was correct within 10 per cent., and that of the number of persons within 2 per cent.

During this period the occupied population has increased by 39 per cent. If the intermediate class had grown in numbers at the same rate, it would have only reached some total between 2,080,000 and 3,060,000 in 1913. Hence a population has been drawn from the manual working class into the ranks of independent workers, shop assistants, clerks, teachers, and other occupations where many of the salaries are small, and into the groups who are assessed to tax on incomes of less than £225 ; this population is certainly very considerable, and on the basis described accounts for from 1,630,000 to 2,610,000 occupied persons in 1913.

The following table summarizes these estimates. In it, for brevity, the mean estimate for 1880 is taken.

	Number of Incomes.			
	1880.	1913.		
		Actual.	139% of 1880.	Excess.
	000's.		000's.	
Income-tax payers over £160 .	618	1,240	860	380
Intermediate incomes under £160	1,850	4,310	2,570	1,740
Totals	2,468	5,550	3,430	2,120

Of those assessed to income tax in 1913, a number, perhaps 50,000, were wage-earners ; the excess of the other income-tax paying and intermediate classes over the number which would have been reached with normal growth is then estimated as 2,070,000, say two millions approximately.

If it is presumed that the income-tax paying class has as a group of families contributed less than the average to the growth of population, there would appear to be a greater flow out of the manual working class than suggested by this table ; but it must be remembered that the fall of the birth-rate does not affect generations born prior to 1880, while the number of unoccupied in middle-class families has probably diminished relatively to the number occupied.

Taking the numbers of occupied persons in 1881 and 1911 as those given in the General Report of the Census at the latter date, and deducing the numbers in 1880 and 1913, and assuming that a percentage of the income-tax payers

at both dates are unoccupied, we have the following table :

	Number of Incomes.	
	1880.	1913.
	000's.	000's.
Manual wage-earners	12,300	15,200
Intermediate class, with incomes less than £160, including shop assistants	1,850	4,310
Assessed to income tax, excluding wage-earners .	620	1,190

These numbers are necessarily rough, but it is doubtful if they can be made more precise.

WAGES

The aggregate of annual earnings was recently estimated [1] by me as £782 Mn. in 1911. Excluding shop assistants and allowing for an increase in numbers and rates of wages to 1913, we obtain £770 Mn. in 1913 as the earnings of the 15,200,000 wage-earners. In this estimate allowance has been made for unemployment, sickness, holidays, casual work, and the existence of a number of persons returned in the census as occupied though not engaged in regular work.

In computing the changes in the national wage-bill it is found that more accurate results are obtained by making a general estimate in one year and applying to it factors measuring the changes in rates and numbers to obtain the aggregate in other years, than if we adopt the more obvious method of making independent estimates at different dates. The year 1906 is adopted as the basis of measurement, since at that date we have a very considerable amount of information collected by the Board of Trade which can be studied in relation to the census of production of the following year.

We must distinguish three measurements : the change in the aggregate of wages, the change in the average per wage-earner, and the change in the average of the rates earned in separate industries. Part of the increase in wages

[1] *Division of the Product of Industry*, p. 30.

has been obtained by a shifting from the less well-paid occupations to the better-paid, mainly accomplished by a flow of the rising generation towards higher wages, and consequently the increase in the average earnings of the manual working class as a body is greater than that found in separate industries.

We have the estimates shown in the following table. The first column exhibits the 'index numbers showing general course of wages in the United Kingdom', published in the XVIIth Abstract of Labour Statistics, Cd. 7733, p. 66, converted to 1880 as base. This is obtained by averaging the changes of time-rates in the building and engineering trades and in agriculture with the changes of piece-rates in some of the textile industries and in coal-mining. Though it shows the direction and dates of changes it has no validity as a measure of change of earnings, which are seldom proportional to changes in piece-rates, and it makes no allowance for the differences in growth of numbers in the various industries; it is also on a narrow basis, having no reference to several large and a multitude of small industries, where the wage movements have possibly been quite different.

Columns 2 and 3 contain estimates by Mr. G. H. Wood (*Statistical Journal*, 1909, pp. 102–3, with subsequent additions). The figures in column 2 show the weighted average of wages in occupations, the same relative numbers in the occupations being taken throughout, i.e. the weights are not changed to allow for the differences in rate of growth of the numbers in the occupations; he heads the column 'unchanged grade'. For column 3 he allows for the more rapid growth of the better-paid occupations.

In column 4 I repeat estimates I have given from time to time. These differ slightly from Mr. Wood's in column 3, especially in the period 1888 to 1892, and it is quite possible that when they are reworked in the light of additional knowledge, Mr. Wood's will be found to be the more correct. In the sequel I adopt column 3, writing 134 for the missing number in 1913.

To obtain the wage-bill in 1880 we have to apply the index numbers of average wages, 100 : 134, and the ratio of the number of wage-earners, 123 : 152, to the wage-bill of 1913 (£770 Mn.). By this process £465 Mn. is found.

Throughout the tables the number of wage-earners includes men and women, boys and girls, and no attempt is made to estimate family income.

ESTIMATES OF MONEY EARNINGS OF ALL WAGE-EARNERS IN THE UNITED KINGDOM, *EXPRESSED AS PERCENTAGES OF THE LEVEL IN 1880.*

	Not allowing for Change in Relative Numbers.		Allowing for Change in Relative Numbers.	
	Labour Abstract.	Mr. Wood.	Mr. Wood.	Mr. Bowley.
	Col. 1.	Col. 2.	Col. 3.	Col. 4.
1880	100	100	100	100
1881	102	100	100	100
1882	103	100	100	103
1883	103	101	101	103
1884	102	101	102	103
1885	101	100	101	101
1886	100	99	101	100
1887	100	100	101	101
1888	102	100	103	104
1889	105	103	106	110
1890	109	108	111	114
1891	110	108	111	115
1892	109	107	110	115
1893	109	106	110	115
1894	108	106	110	115
1895	107	105	110	115
1896	109	106	111	115
1897	110	107	113	116
1898	112	109	114	120
1899	115	111	117	123
1900	120	116	122	130
1901	119	115	122	128
1902	118	113	120	126
1903	117	113	120	125
1904	116	112	120	123
1905	117	111	119	123
1906	119	115	123	126
1907	123	116	129	133
1908	122	115	127	130
1909	121	115	125	129
1910	121	115	127	130
1911	121	—	—	131
1912	124	—	—	135
1913	128	—	—	137

We have then :

	1880.	1913.
Number of earners .	12,300,000	15,200,000
Relative wages .	100	134
Aggregate wages .	x	£770 Mn.

Here $x = \frac{123}{152} \times \frac{100}{134}$ of £770 Mn. = £465 Mn.*

THE NATIONAL INCOME

We have now the means of classifying the national income in 1880 and 1913.

	1880.			1913.		
	Number of incomes. 000's.	Income.		Number of incomes. 000's.	Income.	
		Amount.	% of total.		Amount.	% of total.
		£			£	
Wages . . .	12,300	465 Mn.	41½	15,200	770 Mn.	35½
Intermediate income under £160 . .	1,850	130 ,,	11½	4,310	365 ,,	17
Income assessed to tax over £160, excluding wage-earners .	620	530 † ,,	47	1,190 §	1,030 ‖ ,,	47½
Totals .	14,770	1,125 ‡ ,,	100	20,700	2,165 ,,	100

If now we include £67 Mn., the aggregate of 330,000 incomes (excluding wage-earners') between £160 and £225 in 1913, as belonging to the intermediate class as argued above, we find that this class had 20 per cent. of the national income in 1913, while incomes over £225 account for 44½ per cent. Hence tax-paying income was very nearly the same

* Giffen (*Essays in Finance*, 1890 edition, 2nd series, p. 461) gives a rough estimate of £550 Mn. for 13,200,000 workers in 1883. When allowance is made for some increase between 1880 and 1883 his average is 5 per cent. above that here given. Probably he made less allowance for sickness and unemployment.

† Including £60 Mn. evading tax.

‡ Levi estimated £1,168 Mn. in 1881, and Giffen £1,270 Mn. in 1883. See *British Incomes and Property*, p. 427.

§ Excluding 50,000 wage-earners.

‖ Including £38 Mn. evading tax and excluding £8 Mn., the income of 50,000 wage-earners.

proportion of the whole in 1913 as in 1880 ; but the income over £225 in 1913 was a smaller proportion of the whole than was the income over £160 in 1880 which accrued to an equal fraction of the occupied population.

The average of the wage and intermediate incomes taken together was £42 in 1880 ; the average of the wage and intermediate incomes below £225 in 1913 was £61, an increase of 45 per cent. The averages of incomes over £160 in 1880 and over £225 in 1913 were £855 and £1,120 approximately—an increase of 30 per cent., as stated above. Though the more rapid increase of the lower incomes is noteworthy, it goes a very small distance towards the equalization of incomes ; the gap between £61 and £1,120 is absolutely much greater than that between £42 and £860.

It should be realized that the averages include the wages of girls, boys, learners, and women as well as those of men.

(If we took the minimum and maximum estimates for the intermediate class in 1880 instead of the mean, the percentages in 1880 would be: wages 39 to 44, intermediate 14 to 9.)

That the aggregate paid in wages has been a diminishing fraction of the whole national income is completely accounted for by the transference of numbers from the category ' wage-earners ' to the category ' intermediate income ', and the change only exists if this transference has in fact taken place. The average wage per earner has increased in the thirty-three years at almost exactly the same rate as the average of all incomes. For intermediate years it is not possible to make very accurate estimates, for the dates of the growth of the intermediate class and of the increase of its average income are not known ; but we cannot go far wrong if we assume uniform annual rates of growth, and combine the results with the more exactly known movements of average wages and growth of income-tax income. We obtain the second and third columns of the following table :

Year.	Average of incomes other than wages.	Average of wage-incomes.	Wholesale prices (Sauerbeck).	Cost of living, Mr. G. H. Wood's method.	Real wages.
	Expressed as percentages of their levels in 1880.				
Col. 1.	Col. 2.	Col. 3.	Col. 4.	Col. 5.	Col. 6.
1880 . . .	100	100	100	100	100
Average 1881–5 .	103	101	91	96	105
,, 1886–90 .	104	104	80	89	117
,, 1891–5 .	105	110	76	88	125
,, 1896–1900	117	115	74	87	132
,, 1901–5 .	119	121	80	91	133
,, 1906–10 .	126	126	87	94	134
1911 . . .	134	128	91	96	133
1912 . . .	135	132	97	100	132
1913 . . .	139	134	97	100	134

The estimates are necessarily rough, and not too much reliance must be placed on the apparent jump in non-wage income between 1906–10 and 1911. Apart from this jump the movements shown in columns 2 and 3 are practically the same.

Wages gained a little on other incomes in some short periods and lost in others, and the rate of growth has not been uniform. If we divide the 33 years at 1898, we find that in the 18 years from 1880 the average of non-wage incomes increased 16 per cent., and of wages 13 per cent., while in the 15 years after 1898 the increases are about 20 per cent. and 18 or 19 per cent. At first sight the annual growth appears to be more rapid in the second period, but when the movement of prices is brought into consideration a completely different view appears.

The fourth column of the table gives Sauerbeck's index numbers of wholesale prices of food and unmanufactured commodities, and shows a cumulative fall reaching 25 per cent. in the first period, and a cumulative rise nearly reaching the 1880 level in the second period. Wholesale prices do not, however, measure at all closely the actual influence of price movements on income ; for the relation between them and retail prices is not one of direct proportion and we should need to include rent, payment for direct services, and the value of savings before we could compute the change in the real value of income. The figures are

sufficient to show that average real incomes increased much more than 16 per cent. in the first period, and much less than 20 per cent. (if indeed they increased at all) in the second period.

We can come to rather closer quarters with the effect of prices on real wages, though there is still a great want of precision. Mr. G. H. Wood (loc. cit.) has calculated the change of cost of living on an unchanged standard by a rough method (of which he has not shown the details completely) and his results to 1910 are given in column 5, the figures for 1911 to 1913 being added by me. The fall and rise in the two periods so measured are about half those shown by Sauerbeck's numbers, and such a relationship is very much what we should expect on general grounds ; it is doubtful whether with any amount of research we could improve on this approximation, though the details (especially the treatment of rent) are open to criticism, and I propose to accept them as sufficient for the general purpose for which I wish to use them, rather than to make any fresh computation. There is no official series of retail prices, even of food, which covers the period on a uniform system.

If now we apply these index numbers of cost of living to the estimates of money wages (as in column 6) we find that the increase in the thirty-three years is unaffected, but that practically the whole of it took place in the first eighteen years, and that average real wages were very nearly stationary from the late '90's to 1913. There were slight ups and downs and variations in regularity of employment, but the general movement was so small that the precision of the estimates is not sufficient to detect it. It was not uncommonly alleged immediately before the war that real wages had fallen. Though I do not accept the truth of this statement as being demonstrable on the evidence if the average of all wages is in question, yet it is undoubtedly true if we ignore the part of the progress due to the numerical increase of the better-paid occupations. The Labour Abstract figures and Mr. Wood's ' unchanged grade ' show increases of only about 10 or 11 per cent. in money wages

in about fifteen years in which the cost of living had apparently increased 15 per cent.; and since this is the case for the average it follows that in many occupations the disparity between the increase of wage and the increase of cost of living was greater. The vast majority of men below the military age at the beginning of the war began their adult working life after 1896, the date of lowest prices, and throughout their experience as householders have found prices rising against them, and having chosen their occupation have not benefited by that part of the increase in average wages which is due to the shifting of the rising generation to better-paid work. Such men were naturally not impressed by demonstrations by statisticians (including myself) that they were better off than their fathers had been.

It may be the case that a rise of prices affects the wage-earning and small-salaried classes more than those who are better off; for the latter having money to spare can choose to spend it on those goods which have increased in price less than the average and can take advantage of the continued improvements in manufacture and the growing variety of the goods which fill the shops; at any rate they are not forced to reduce their standard of life till an increase of prices seriously passes the growth of their income. It is inevitably the case that the working class is more inclined to observe and criticize luxurious expenditure at a time when its own progress is checked, than when it is experiencing prosperity. I think, however, that the increase of luxury and the abundance of wealth which many people believe they observed before the war were illusions, fostered by the newspapers. I can find no statistical evidence that the rich as a class were getting rapidly richer in real income (money measured by its purchasing power) in the years preceding the war, though the actual amount of money spent was the greater the higher prices rose. A considerable part of the impression of wealth was, I think, caused by the diversion of expenditure from other objects to motor-cars. A few motor-cars can in a week give evidence of wasteful and arrogant expenditure over several counties,

while an equal sum spent on carriages and horses would have a much more limited effect. It may be the case that wealth, without increasing as a whole more rapidly than population, was passing into the possession of persons who enjoyed ostentatious expenditure; and if the number of rich people increased merely with the population, their presence becomes more obvious as this confined island is more closely filled. It should also be said that the years immediately before the war were years of very good trade whose effect takes a little while to be shown in income-tax statistics.

SUMMARY OF DISTRIBUTION IN CLASSES

To summarize the conclusions so far obtained for the period 1880 to 1913:

The proportion of the national income received as wages diminished from about 41½ to 35½ per cent., but the receipts per wage-earner increased about 34 per cent.

The proportion received by persons assessed to income-tax increased slightly. The number of such persons increased more rapidly than the occupied population (or the number of persons with separate incomes) and if to allow for this we measure incomes above £225 in 1913 and compare them with incomes above £160 in 1880, the proportions of the total are 47 per cent. at the earlier and 44½ per cent. at the latter date.

The proportion received by the intermediate class increased at least, on my method of reckoning, from 14 per cent. of the whole in 1880 to 17 per cent. in 1913. The evidence points to a greater increase, which, when we add in the incomes in 1913, between £160 and £225, is from 11½ per cent. at the earlier date and 20 per cent. at the latter.

The average of all incomes was about £76 in 1880 and £104 in 1913, an increase of 37 per cent.[1] The average

[1] The population increased less rapidly than the number of incomes owing mainly to the diminishing proportion of young children. Per head

income of persons assessed to income tax was very nearly the same (£855 and £838) at the two dates; but if we compare incomes over £225 in 1913 with those over £160 in 1880, the averages are £855 and £1,120, an increase of about 30 per cent. The fact that the increase in the general average is greater than in either of the three classes is explained by the transference from wage-earners to classes with higher incomes.

DISTRIBUTION AMONG PERSONS

One naturally would wish to proceed to analyse the distribution of income among persons, instead of among groups, at the two dates. Unfortunately the data which have led in the hands of Sir Leo Chiozza Money and others to a description of this distribution in the twentieth century, are in no case available for a similar analysis in 1880. It is well, however, to give some estimates for the pre-war period, lest it might be thought I wished to conceal the great inequalities in distribution. The following table completes an estimate I gave for incomes in the *Quarterly Journal of Economics* (Harvard), February 1914, p. 261:

INCOMES, WAGES, ETC., IN THE UNITED KINGDOM, 1910.

	Number of incomes. Thousands.	Aggregate income. £	Percentages of Total. Numbers.	Aggregate Income.
Wages	14,800	720 Mn.	74·2	39
Intermediate Income	4,050	335 ,,	20·3	18
Income assessed to tax:				
£160–700	880	250 ,,	4·4	15
£700–5,000	200	415 ,,	1·0	22
£5,000–	12	150 ,,	·06	8
	19,940	1,870 ,,	100	100

Besides these sums there is perhaps £40 Mn. evading tax to be added to the income-tax incomes, which with the income of institutions and other non-personal income and some other items, bring the total to about £1,960 Mn.

of the population the incomes were about £33 and £47 in 1880 and 1913, an increase of 42 per cent. To these should be added some minor items shown in *The Division of the Product of Industry.*

The only statistics of any reasonable precision that we have for a thirty years' comparison are those of the assessed annual values of private dwelling-houses in Great Britain. They may be tabulated as follows :

NUMBER OF PRIVATE DWELLING-HOUSES IN GREAT BRITAIN.

Number of houses.[1]			Number of houses.[2]			
Assessed Value.	1881–2.	1909–10.	Assessed Values.	1892–3.	1903–4.	1913–14.
	Thousands.			Thousands.		
£			£			
20 —	274	650	20 —	596	952	1,131
30 —	263	524	41 —	152	210	230
50 —	125	187	61 —	45	59	63
80 —	30	39	80 —	31	37	39
100 and over	72	87	100 and over	76	87	87
	764	1,487		900	1,345	1,550

The population of Great Britain increased 33 per cent. in the period 1881 to 1911. The number of assessments over £80 increased only 24 per cent. So far as this test goes, there is no sign of increasing concentration of expenditure in the hands of the rich.

DISTRIBUTION BETWEEN PROPERTY AND LABOUR

We can get more definite results when we compute the part of income which arises from ownership and the part that is due to labour, exertion, or services. The easiest method of procedure is to credit to work all wages, salaries, and other income (not from property) of the intermediate class, and also the income which pays tax at one of the lower rates as so-called 'earned' income, together with estimates for income evading tax and for income earned by persons who, having more than £2,000 a year, paid the full rate. For 1913 we have the following estimate :

		£
Property :	Schedules A, C, and part of D, together with some allowance for evasion	760 Mn.
,,	Exempt because in the possession of persons with less than £160 a year	50 ,,
		810 ,,

[1] *British Incomes and Property*, p. 445.
[2] Inland Revenue Commissioners' Reports.

			£
Services and work:	Schedules B, E, and part of D, together with some allowance for evasion and less a small sum of wages . . .		270 Mn.
„	„	Intermediate class	315 „
„	„	Wages	770 „
			1,355 „

There are some small items excluded from both groups. This estimate gives 37½ per cent. of income to property, and 62½ per cent. to services and work, a proportion of exactly 3 to 5.

Something depends on the allotment of Schedule D. To work is credited all salaries and the incomes of firms, and this method includes the income which is due to the use of capital owned by members of firms. The gross amount of incomes of 56,000 firms was £88 Mn. in 1912–13, which yields about £650 for each partner.[1] If we assume that each partner earns £400, apart from the use of capital owned by the firm, then £34 Mn. would be due to capital, and of the whole national income 39 per cent. would be credited to property and 61 per cent. to labour. On the other hand, farmers' incomes, which may be credited mainly to personal exertion, are underestimated in Schedule B.

Now the publications of the Inland Revenue Commissioners do not make it possible to carry back the subdivision of Schedule D on the same lines earlier than about 1900, but a fairly comparable series can be obtained by assuming that the one-quarter of the gross assessment under this schedule was 'earned' at the earlier dates. It is not of great importance what fraction is taken (if the same is used throughout) since the income under the whole of Schedule D accounted for less than 23 per cent. of the whole national income.

On this basis we find in 1880 :

		£
Property:	Assessed to income tax or evading . . .	395 Mn.
	Exempt	25 „
		420 „

[1] In *British Incomes and Property*, p. 245, it is estimated that the average number of partners in a firm is 2·4.

		£
Services and work:	Assessed to income tax or evading	135 Mn.
	Intermediate class	105 „
	Wages	465 „
		705 „

The proportions to property and labour are 37½ per cent. to and 62½ per cent., exactly as in 1913. Though it is not proper to lay stress on the exact equality of the proportions at the two dates, yet the evidence is sufficient to show that any change there may have been is inconsiderable.

So far as estimates can be made for the intermediate period, it appears that the proportion to property fell from 37½ per cent. in 1880 to 36 or 35 per cent. in the following 15 or 20 years, and increased since 1900 and since 1910 till it again reached 37½ per cent. in 1913.[1]

The income from property of course includes income from abroad. This was estimated by Mr. C. K. Hobson (*The Export of Capital*, p. 204) as £50 Mn. in 1880 and £166 Mn. in 1910. Other writers put a higher figure in recent years, and it may be taken, I think, at £200 Mn. in 1913 without exaggeration. The income derived from the ownership of land, houses, railways, plant, machinery and other capital in the United Kingdom, owned by residents in the United Kingdom, may be estimated to have increased from £370 Mn. in 1880 to £610 Mn. in 1913, an increase of 65 per cent., while the income from services, effort, and labour increased about 90 per cent.; these percentages are little affected by the division of Schedule D incomes.

It is not possible to measure the *amount* of capital apart from its *value*, and its value can only be estimated from its earning power; consequently we cannot estimate the change in the quantity of capital in the thirty-three years; but there can be no doubt that the growth of home capital has been more rapid than the growth of population, and savings invested at home have almost certainly added more than 1 per cent. per annum to the capital stock. Land

[1] See the *Economic Journal*, 1904, p. 459, for estimates which indicate that the proportion was nearly the same back to 1860.

and capital were not in this period able to extort an increasing share of the national income, as Marxian Socialists anticipated, but rather rendered increasing services for a diminishing share. If we consider labour only in its narrow sense of wage-paid manual labour, we find that aggregate wages have increased at the same rate as the income of property in the United Kingdom.

CONCLUSION

The broad results of this investigation are to show that the national dividend increased more rapidly than the population in the generation before the war, so that average incomes were quite one-third greater in 1913 than in 1880; the increase was gained principally before 1900, since when it barely kept pace with the diminishing value of money. The increase was shared with remarkable equality among the various economic classes. Property obtained a diminishing share of the home product, but an unchanged share of the whole income when income from abroad is included.

The only marked alteration that has been found is the increase of the intermediate class that contains persons with small salaries, profits, or earnings in other forms than wages. These include clerks and others in retail and wholesale and distributive trade, and the younger or less successful persons in teaching and other professions. This class is no doubt mainly recruited from the sons and daughters of artisans and labourers; though their incomes are not greater than the earnings of skilled artisans, yet when they are regarded as part of the class from which they came, they appear in the vanguard of that class, increasing the relative number of educated and skilled labour whether manual or clerical. The progress of labour cannot reasonably be considered without reference to this movement.

Manual labourers have been a diminishing proportion of the population. More of the whole effort of the population has turned to direction, distribution and exchange, and relatively less to production. This has been rendered

possible, it may reasonably be presumed, by the increasing services of capital to production, and probably also by the increased intelligence of labour.

The constancy of so many of the proportions and rates of movement found in the investigation seems to point to a fixed system of causation and has an appearance of inevitableness. The results of the system have not produced a satisfactory livelihood to the bulk of the population, and its working in the generation before the war afforded no promise of any rapid improvement; indeed, in the early years of this century real income increased little faster than the population. Statisticians writing at or before the date of the beginning of the Fiscal Controversy (1902) could reasonably dwell with a certain satisfaction on the progress that had been made, and the slackening in the years that followed was masked by rising prices and years of good trade; but before the war it had become evident that the progress of real wages was checked, and it appears now that this check was not on wages alone.

Quite apart from the prominence which the circumstances resulting from the war has given to the widespread discontent with material conditions, it must have become increasingly evident that the methods of production and of sharing the product needed re-examination; but there is perhaps no good reason to think that much change was possible. Whether the radical changes that have been brought about in opinion, in resolution to effect improvements, in outlook generally and in methods of production, can produce a new equilibrium radically different from the old is a question which a student of statistics is not specially qualified to answer. Here I have thought it best to confine myself to those problems whose investigation has been my special work for many years.

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